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SOVIET ENGINEERS HELP CHINA TO IMPROVE HIGHWAYS

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During the past 4 years, China has either repaired, improved, or newly constructed more than 30,000 kilometers of various types of roads, and has increased its total kilometrage of automobile highways from 25,000 kilometers to 130,000 kilometers. Much of this achievement, however, could not have been attained without the help of Soviet highway engineers.

There are three Soviet highway engineers who have been helping China in the improvement of highways during the past 4 years; their names are A-lien-te-yeh-fu [Alendayev?], P. h-lu-pao-lo-to-fu [Beloboldov?], and Pi-ch'iu-chin [Bichudzhin?]. Some of their outstanding services rendered during the past 4 years include:

1. During 1952, the Soviet engineers were at the construction site of a bridge over the Wei Ho on the Sian-lanchow Highway to give suggestions and advice in the construction of the bridge. The first suggestion they made was to ascertain the flow of water at the construction site, since, according to their calculation, the flow of water of 5,800 cubic meters per second as it was indicated on the original plan seemed too high. After careful computation, the Soviet engineers determined that the flow of water at that point was only 3,110 cubic meters per second. The next suggestion they made was to make an adjustment on the original plan to shorten the bridge by 150 meters. The original plan called for construction of a 35-span bridge 598.6 meters long, but the Soviet engineers thought that it could be revised to a 25-span bridge 447.8 meters long.
2. Also during 1952, they inspected the area where a road was to be constructed over frozen ground near La-p'ing on the Hsi-ning--Yu-shu Highway in the Northwest. The ground in that area consists of a layer of grass of about 2 decimeters thick covering a layer of peat of 6-7 decimeters thick. Under the peat is a layer of solid ice 6-8 decimeters thick, and under the solid ice is a layer of frozen sand. The original plan called for removing the layer of grass and a part of the peat, and laying the roadbed on the peat. However, the Soviet engineers emphasized that the ice in that area was of a permanent type which was protected from melting by the surface grass and peat, and suggested that the grass should not be removed, instead, that the roadbed be built directly on the grass. They also suggested that the ditches along the roadbed should be built at least 10 meters away from the roadbed, instead of directly along the foot of the roadbed as it was planned originally. With these suggestions, the most difficult problems in the construction of that highway were successfully solved.
3. During the winter of 1952, the Soviet engineers were in Ch'ang-tu, Sikang Province, to help select the most suitable route for the Ch'ang-tu--T'ai-chao section of the Sikang-Tibet Highway. There were four possible routes to choose from in this section, the southern route, the northern route, the central route, and the north-central route. After each route was thoroughly studied by the Soviet engineers, the southern route was selected for the following reasons:

- a. It will avoid the high altitude area. Most of the southern route will be located at an elevation below 4,000 meters, instead of 5,000 meters or higher for the other routes.

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b. At the lower elevation, construction work can be carried on throughout the year, and, when the highway is constructed, it will be opened to traffic all year around.

c. It will require less earthwork. Although the southern route is about 100 kilometers longer than the north-central route, it will require much less earthwork and the cost of building will be much less than for the north-central route.

d. There will be fewer slopes on the southern route than on the other routes.

4. During the spring of 1953, the Soviet engineers were in Shantung Province to inspect the highway being constructed between Ch'foo and Wei Ho. They pointed out many changes that could be made in the original plan to save large amounts of construction funds. For instance, many curves could be eliminated and the bridges across the Pai-sha Ho, the Ta-ku Ho, and the Wei Ho could be built with less expense. They pointed out that the length of the bridge over the Wei Ho could be shortened by 25-30 percent from the original plan. All these suggestions by the Soviet engineers saved large amounts of money and construction materials for the country.

5. During the summer of 1953, the Soviet engineers were asked to solve the problems of paving the Peiping--Nan-k'ou Highway and a branch highway with gravel and tar. The problem there was how to get the desired hardness for the pavement after rolling. The Soviet engineers discovered that the day-time temperature was too high for rolling, and that the tar had not thoroughly soaked into the bottom of the layer of gravel. The engineers suggested that the road rollers be used only before 1000 hours and after 1800 hours for 3 days. The initial work was done by 6-8 ton rollers and finally by 10-12 ton rollers. The results were most satisfactory.

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